KAWINSKI, Stanislaw (Warszawa)

Comparison of economic effects of blast-furnace of various capacities. Problemy proj hut maszyn 11 no.11:356-359 N '63.

KAWINSKI, Stanislaw, mgr inz.

New supply base of steel castings. Przegl techn 85 no.49:1 6 D '64.

SZPADRON KA, Joanna; KAWIORSKI, Janusz

A case of megalodactyly in a 3-month-old infant. Pediat. Pol. 40 no.2:203-205 F '65.

1. Za Szpitala imeni J. Korczaka w Lodzi (Dyrektor: dr. med. Z. Pazenicka-Gundlachowa).

Diatr: 4E3d

Nitration of toluene in the presence of manganese dioxide. T. Urbański, A. Semefczuk, and H. Kawka (Wojsk. Akad. Tech., Warsaw, Poland). *Bull. acad. polon. sci., Sér. sci., Chim., geol. et geograph.* 8, 15-16(1960)(in English); cf. preceding abstr.—2,4-Dinitrobenzaldehyde (I) was the main product of the reaction studied. To 10 g. toluene was slowly added with vigorous stirring a mixt. of 21 g. HNO_3 (d. 1.41) and 160 g. anhyd. H_2SO_4 simultaneously with 18.8 g. fresh MnO_2, at 30–40°, the light yellow mixt. stirred 30 min., poured into cold water, and 6.4 g. crude I extd. with Et_2O. It contained traces of mononitrotoluenes. Similarly, 9.1 g. I was obtained at 70° from 5 g. *p*-nitrotoluene, 45 g. H_2SO_4 (d. 1.84), 39 g. HNO_3 (d. 1.51), and 9.4 g. MnO_2; at 30–40° this reaction gave 21% I and 7% *p*-nitrobenzoic acid with oxalic acid and CO_2 by-products. The reaction with $KMnO_4$ replacing MnO_2 was extremely violent.

J. Stecki

KAWKA, H.

Distr: 4E3d

Nitration of toluene in the presence of vanadium pentoxide. T. Urbański, A. Semeńczuk, and H. Kawka (Wojskowa Akad. Tech., Warsaw). *Bull. acad. polon. sci., Sér. sci., chim., géol. et géograph.* 8, 17(1960)(in English); cf. preceding abstr.—A procedure similar to that described in the preceding abstr. gave at 30–40° 30% 2,4-dinitrobenzaldehyde with 7% *p*-nitrobenzoic acid with 6 g. V_2O_5, 14 g. HNO_3 (d. 1.41, and 90 g. H_2SO_4 (d. 1.84). At 60–70° the yield of aldehyde was lower; at 70–90° tarry products were obtained. J. Steczki

5

1-9-9 (WB)

- URBANSKI, T.; SEMENCZUK, A.; KAWKA, H.

Nitration of toluene in presence of manganese dioxide. Bul chim PAN 8 no.1:15-16 '60. (EEAI 10:9/10)

1. Technical Military College, Warsaw. Presented by T. Urbanski.

(Nitration) (Toluene) (Manganese compounds) (Oxides)

URBANSKI, T.; SEMENCZUK, A.; KAWKA, H.

Nitration of toluene in presence of vanadium pentoxide. Bul chim PAN 8 no.1:17 '60. (EEAI 10:9/10)

1. Technical Military College, Warsaw. Presented by T. Urbanski.

(Nitration) (Toluene) (Vanadium oxides)

DEMEL, Waclaw, mgr inz.; KAWKA, Kazimierz, inz.

A 400 kv transmission line. Przegl elektrotechn 39 no.9:330-335 S '63.

1. Energoprojekt, Oddzial Krakow.

KAWKA, Stanislaw

A letter fro Lebanon: architect Karol Schayer. Architektura Pol no.11/12:477 '61.

KIKIEWICZ, Zbigniew, doc. dr inz.; KAWKA, Wlodzimierz, mgr inz.

Calculation of a spinning defibrator. Przegl papier 21 no.3: 69-72 Mr '65.

1. Department of Paper Manufacture and Paper Machines of the Lodz Technical University.

BIEDRZYCKA, D.; BILOT, L.; KAWSKI, A.; KORBA, M.

Influence of polar molecules of the solvent on the electronic spectra of yellowish eosine. Bul Ac Pol mat 10 no.11:611-616 '62.

1. Department of Physics, Normal School, Gdansk. Presented by A, Jablonski.

BILOT, J.L.; KAWSKI, A.

Spectroscopic determination of dipole moments of excited molecules. Acta physica Pol 22 no.3:289-291 S '62.

1. Physikalisches Institut, Pädagogische Hochschule, Gdansk.

KAWSKI, A.; POLACKA, B.; CZYZ, P.

Influence of solvent mixture on the absorption and fluorescence spectra of dyes. Acta physica Pol 23 no.6:705-714 Je '63.

1. Physikalisches Institut der Pädagogischen Hochschule, Gdansk.

KAWSKI, A.; POLACKA, B.

Influence of the solvent on the electron spectra of POPOP.
Acta physica Pol 23 no.6:811-817 Je '63.

1. Physikalisches Institut, Pädagogische Hochschule, Gdansk.

[redacted] without resorting to a preliminary calibration of the stack.

Card : 1/1

KAWSKI A.

Distr: 4E2c(j)

The dependence of emission anisotropy of fluorescence on the concentration of luminescent molecules in Plexiglass luminophors. A. Kawski (Politech., Gdańsk, Poland). *Bull. acad. polon. sci., Ser. sci. Math., astron et phys.* 5, 671–5(1958)(in English).—The emission anisotropy, r (Jabłoński, *CA* 52, 7854*d*; 53, 14685*f*) of Rhodamin B, "yellowish water-soluble eosin," tetrabromofluorescein, and fluorescein, in poly(methyl methacrylate) solns., was measured by the visual compensation method with a Savart polariscope, Arago compensator, and a spectrograph. The general formula for polarization of k glass plates (*Optik* 14, 260(1957)) was used. Discussion in terms of r was found to be much simpler than in terms of polarization; in excellent agreement with J.'s theory was found (*loc. cit.*).

J. Stecki

4 1-59 (NB)

KAWSKY, A.

Distr: 4E3d

Determination of the critical molecule distance for concentration depolarization of fluorescence. C. Bojarski and A. Kawsky (Tech. Hochschule, Gdańsk, Poland). *Ann. Physik* [7], 5, 31-4(1959).—A simple formula is derived for calcg. the crit. mol. distance R_0, introduced by Förster (*C.A.* 43, 5667*d*) for describing the phenomenon of concn. depolarization of fluorescence. R_0 characterizes a state for which the emission probability is equal to the transition probability of excitation energy. If, from the exptl. depolarization curve the concn. n'(in mol./cc.) for which the degree of polarization is $P = 8P_0/(6+P_0)$ (P_0 = the max. degree of polarization of the fluorescence in dil. soln.), then $R_0 = \sqrt[3]{3/4\pi n'}$. The following R_0 values (in A.) were found: fluorescein (rhodamine B) in glycerol, 55 (63); anthracene in Plexiglas, 32. . . . . R. Nitsche

4

KAWSKI, A.

K

POLAND/Optics - Luminescence.

Abs Jour : Ref Zhur Fizika, No 11, 1959, 26079

Author : Kawski, A.

Inst : Gdansk Technical University, Gdansk, Poland

Title : On the Effect of Concentration on the Polarization of the Fluorescence of Rigid Solutions.

Orig Pub : Bull. Acad. polon. sci. Ser. sci. math., astron. et phys. 1958, 6, No 8, 533-539, XLII

Abstract : An investigation was made of the dependence of the degree of polarization of the fluorescence of solutions of anthracene and fluorescein in organic glass on the concentration of the fluoresdent substance. The observed reduction in degree of polarization with increasing concentration of the anthracene is explained by the author with the aid of the Jablonski theory (Referat Zhur Fizika,

Card 1/2

Distr: 4E2c(j)

15.6
1-9g(NP)

Emission anisotropy of photoluminescence of Plexiglass luminophors. J. Glowacki, A. Kawski, and B. Polacka (Politech., Gdansk, Poland). *Bull. acad. polon. sci., Ser. sci. Math., astron. et phys.* 7, 353-5(1959)(in English).—The emission anisotropy, *r*, (Jabłoński, *CA* 53, 14685*f*; 52, 7854*d*) (related to the degree of polarization, *P*, by the equation $r = 2P/(3 - P)$) was measured by a visual method (Kawski, *CA* 53, 2787*e*; preceding abstr.), for yellow eosin ($C_{20}H_6O_5Br_4K$), tetrabromofluorescein, and fluorescein, in Me methacrylate or in Me methacrylate with EtOH, which were slowly (30–40 days) polymerized. The solns. were excited with a Hg lamp with a Wood filter and Glan polarizing prism. A decrease of *r* with concn. increase was observed for yellow eosin and tetrabromofluorescein solns., and a const. *r* was found for fluorescein, while Czajkowski and Grzywacz (*CA* 52, 18439*e*) observed a rise of *r* with concn. for eosin. The excitation mechanism advanced by them is therefore not confirmed. J. Stecki

GRZYWACZ, J.; KAWSKI, A.; POLACKI, Z.

On the photoluminescence of fluorescein in methyl polymethacrylate.
Bul Ac Pol mat 8 no.3:187-190 '60. (EEAI 9:11)

1. 1st Department of Physics, Technical University, Gdansk and Physics Department, Normal Pedagogic School, Gdansk, Presented by A.Jablonski.
(Luminescence)
(Fluorescein)
(Methyl methacrylate)
(Polymers and polymerization)

KAWSKI, A.; POLACKI, Z.

On the concentration extinction of fluorescence of anthracene in plexiglas. Bul Ac Pol mat 8 no.11/12:817-819 '60.

1. Katedra Fizyki, Politechnika Gdanska, Gdansk, i Katedra Fizyki, Wyzsza Szkola Pedagogiczna, Gdansk. Presented by A. Jablonski.

(Fluorescence) (Anthracene) (Plexiglas)

KAWSKI, Alfons

Photoelectric methods of measurement of the degrees of photoluminescence polarization in solutions. Postepy fizyki 11 no.5/6:503-519 '60.

1. I Katedra Fizyki Politechniki Gdanskiej. Katedra Fizyki Wyzszej Szkoly Pedagogicznej w Gdansku.

KAWSKI, A.
Surname (in caps); Given Names

(1)

Country: Poland

Academic Degrees: /not given/

Affiliation: Institute of Physics, I Institute of Physics and High School of Pedagogy, Technical High School, Gdansk /no original language version given/

Source: Leipzig, Annalen der Physik, Vol 8, No 1-2, 1961, pp 116-119.

Data: "Intermolecular Energy Transfer and Concentration Depolarization of Fluorescence."

KAWSKI, Alfons

Depolarization of the photoluminescence in solutions. Postepy fizyki 12 no.4:443-466 '61.

1. I Katedra Fizyki Politechniki Gdanskiej i Katedra Fizyki Wyzszej Szkoly Pedagogicznej w Gdansku.

P/047/61/012/006/001/001
D204/D305

AUTHOR: Kawski, Alfons

TITLE: Dipole moments of excited molecules

PERIODICAL: Postepy fiziky, v. 12, no. 6, 1961, 699-711

TEXT: A short account of Western work concerned with measuring the dipole moments of excited molecules. The methods considered are: (1) The spectroscopic method, in which the mean dipole moments of excited molecules are determined by measuring the shifts of the fluorescence and absorption maxima when the fluorescent compound under investigation is dissolved in various (polar or non-polar) solvents. The method is explained semi-quantitatively and is illustrated by examples. (2) Determining the dipole moments of excited molecules in equilibrium with the surroundings, by measuring the extent of polarization of fluorescence from a solution placed in a strong electric field. The method is described and illustrated in some detail and is thought to be very reliable. (3) The electrical dichroism method, in which the dipole moments of excited

Dipole moments of ...

P/047/61/012/006/001/001
D204/D305

molecules in the Franck-Condon state are found by determining the extent of polarization of a beam of light passing through a solution placed between a pair of electrodes, to which a high potential is applied. The method which is applicable to both fluorescent and non-fluorescent compounds is briefly described and illustrated. By comparing the results obtained with the above methods, the author concludes that the measured values of dipole moments increase in the following order: method (2)< method (3)< method (1). There are 12 figures, 3 tables and 11 non-Soviet-bloc references. The references to the English-language publications read as follows: N. Mataga, Y. Kaifu, M. Koizumi, Bull. Chem. Soc. Japan, 28, 690, (1955) and ibid., 29, 465, (1956); F. Perrin, J. Phys. Radium, 7, 390, (1926) and Ann. Phys. (Paris), 12, 169, (1929).

ASSOCIATION: Katedra fizyki wyższej szkoły pedagogicznej, Gdańsk
(Physics Department of the Higher Training College for Teachers, Gdańsk)

Card 2/2

KAWSKI, A.

Electrooptical methods of determining dipole moments of irritated nuclei. Wiad chem 15 no.10:664-665 '61.

(Nuclear moments)

P/045/61/020/011/003/004
B137/B108

AUTHORS: Kawski, A., Polacka, B., and Polacki, Z.

TITLE: Absorption and luminescence spectra of some dyes in mono- and polymethyl methacrylate

PERIODICAL: Acta Physica Polonica, v. 20, no. 11, 1961, 903 - 914

TEXT: Jabłoński's theory (Jabłoński, A., Acta phys. Polon., 14, 295 (1955) and 17, 481 (1958)) on the self-depolarization of photoluminescence of solid dye solutions was experimentally verified. For this purpose the authors measured the fluorescence and absorption spectra of solutions of fluorescein, yellowish eosin, rhodamine B, and rhodamine 6G in plexiglass. To improve the solubility of the dyes, 10% of ethyl alcohol were added to the methyl methacrylate from the "Zakłady Chemiczne Oświęcim". The polymerization of the solutions took place within a few months in the dark and, in some cases (fluorescein and yellowish eosin) under the light of a mercury vapor lamp. The absorption spectra were measured with an arrangement consisting of a Zeiss monochromator and an RCA 5819 or FEU-19 photomultiplier, while the fluorescence spectra were recorded with a Zeiss

Card 1/3

Absorption and luminescence...

reflecting monochromator, an RCA 5819 photomultiplier, and a d-c bridge amplifier. The results obtained for fluorescein ($C_{20}H_{12}O_5$) showed that a band at 4600 Å was clearly observable only if polymerization was carried out in light. The emission spectra of yellowish eosin ($C_{20}H_8O_5Br_4K$) also indicated that the shape and position of the spectra was largely dependent on the kind of polymerization. A comparison of the absorption and emission spectra of yellowish eosin in plexiglass and glycerin showed that the overlap of the two spectra obtained for the solution in plexiglass was much larger than that found for the solution in glycerin. In contradistinction to the absorption and emission spectra of yellowish eosin, those of rhodamine B ($C_{28}H_{31}O_3N_2Cl$) exhibit the same position of the maximum for all solvents, and do not depend on the concentration of the dye. The effect of ultraviolet light is considerably less than for eosin. The same qualitative results were obtained for rhodamine 6G ($C_{26}H_{27}O_3H_2Cl$). The effect of alcohol on the spectra was insignificant in all solutions. The shape and position of the spectra was, however, largely dependent on irradiation during polymerization. Doctor A. Uzarewicz of the Institute

24,3500

S/081/62/000/006/007/117
B166/B101

AUTHORS: Kawski, A., Polacki, Z.

TITLE: Concentration extinction of the fluorescence of anthracene in plexiglass

PERIODICAL: Referativnyy zhurnal. Khimiya, no. 6, 1962, 14, abstract 6B66 (Bull. Acad. polon. sci. Sér. sci., math., astron. et phys., v. 8, no. 11-12, 1960, 817-819)

TEXT: The relative fluorescence yields are determined for solutions of anthracene in plexiglass over a wide range of concentrations. It is established that the concentration extinction of anthracene is insignificant, and only becomes marked at a concentration of $\sim 10^{-2}$ moles. The deviations found earlier between the experimental relationship of concentration depolarization (at high anthracene concentrations) and that computed from the Yablonskiy formula (RZhKhim, 1956, no. 20, 64545) can be attributed to the neglect of the concentration extinction of anthracene in the calculations. [Abstracter's note: Complete translation.]

Card 1/1

P/528/61/001/000/001/007
D207/D308

AUTHOR: Kawski, Alfons

TITLE: Determination of the constants occurring in the equations of the theory of photoluminescence self-depolarization of solutions

SOURCE: Danzig. Wyższa Szkoła Pedagogiczna. Zeszyty naukowe. Matematyka, fizyka, chemia, v. 1, 1961. Danzig, 1962, 17 - 21

TEXT: The concentration depolarization of the photoluminescence of solutions was treated theoretically by. S. Vavilov (Microstructure of Light, translation from Russian into Polish, Warsaw, 1953, p. 155), by T. Foerster (Ann. Physik, 2, 55, 1948: Fluoreszenz Organischer Verbindungen, Goettingen, 1951, p. 172) and by A. Jabłonski (Acta phys. polon, 14, 295, 1955: 17, 481, 1958). In the present paper a relationship is derived between the constants in the theories of Vavilov and Jabłonski and the 'critical distance' R_o in Foerster's theory, which is that distance between

Card 1/3

Determination of the constants ...

two neighboring luminescent molecules at which the probability of nonradiative transfer of the excitation energy is equal to the probability of photoluminescent emission. The ratio τ_0/k_2 in Vavilov's expression for the degree of polarization P in the case of low dye (solute) concentrations:

$$\frac{1}{P} = \frac{1}{P_0} + \left(\frac{1}{P_0} - \frac{1}{3}\right) \frac{\tau_0}{k_2} n \qquad (7)$$

is related to the quantity v in Jabłonski's expression

$$\frac{1}{P} = \frac{1}{P_0} + \left(\frac{1}{P_0} + \frac{1}{3}\right) \frac{1}{3} vn \qquad (8)$$

by $v = 3\tau_0/k_2$. Here n is the number of molecules per 1 cm^3, τ_0 is the lifetime of the excited molecule for $n \to 0$, $1/k_2$ is the initial degree of polarization, v is the volume of the sphere active in the process of excitation energy transfer. It is shown

Card 2/3

that $R_o = \sqrt[3]{3\tau_o/4\pi k_2}$ and that the ratio τ_o/k_2 represents the volume of a sphere of radius R_o. Denoting by R_J the radius of the active sphere in Jabłonski's theory, by R_V the radius of the active sphere in Vavilov's theory, and using $v = 3\tau_o / k_2$ it is found that

$$R_J = \sqrt[3]{3}\, R_W = \sqrt[3]{3}\, R_o \approx 1{,}44\, R_o \qquad (14)$$

The R_J/R_O ratio given by the above relationship was confirmed by taking the published experimental values for R_J for certain solutions (anthracene in Plexiglass, rhodamine B in glycerine and fluorescein in glycerine) and the calculated values of R_o for the same solutions: R_J/R_o was found to be about 1.4. There is 1 table.

ASSOCIATION: Katedra Fizyki Wyższej Szkoły Pedagogicznej, Gdańsk
(Physics Department, Higher School of Education, Gdańsk)

SUBMITTED: April 22, 1961

KAWSKI, A.; POLACKA, B.

Absorption and fluorescence spectra of fluorescein PMAM. Acta physica Pol 21 no.2:193-195 F '62.

1. Physikalisches Institut der Pädagogischen Hochschule, Gdansk.

KAWSKI, A.

Fluorescence and polarization spectra of dyestuffs. Bul Ac Pol mat 11 no.1:37-38 '63

1. Katedra Fizyki, Wyzsza Szkola Pedagogiczna, Gdansk. Presented by A. Jablonski.

KAWSKI, A.

Independence of fluorescence spectra from the length of excitation waves. Bul Ac Pol mat 11 no.8:567-572 '63.

1. Katedra Fizyki, Wyzsza Szkola Pedagogiczna, Gdansk.
Presented by A. Jablonski.

P/047/63/014/001/003/003
D256/D308

AUTHORS: Kawski, Alfons and Korba, Maria

TITLE: Relation between absorption and luminescence spectra of compound molecules

PERIODICAL: Postępy Fizyki, v. 14, no. 1, 1963, 101-114

TEXT: A review article dealing with the problem of mirror symmetry of the absorption and emission bands in molecular spectra, concerning in particular the Stepanov theory. The absorption and luminescence spectra of many complex systems are connected by B.I. Stepanov's universal relation (Akademiya nauk SSSR, Doklady, v. 112, 839, 1957; Akademiya nauk SSSR, Izvestiya, ser. fiz., v. 22, 1034, 1958; ibid., v. 22, 1367, 1958) suitable for calculating the shape of the luminescence spectrum from the knowledge of the shape of the long-wave absorption band, and vice-versa. The derivation of the universal relation is given, and the theoretical predictions are compared with experimental data for spectra of solutions of various organic compounds. The Stepanov expression modified by I. Ketskeméty

Card 1/2

Relation between absorption ...

et al. (Ann. Phys. (Leipzig), v. 8, 342, 1961) is given, relating the absorption and emission spectra to the quantum efficiency as a function of the inducing wave-length; the experimental verification of the formula is quoted for spectra of complex molecules in solution. There are 1+ figures and 25 references

ASSOCIATION: Katedra Fizyki Wyższej Szkoły Pedagogicznej, Gdańsk (Physics Department, Advanced Pedagogical [illegible] Gdańsk)

KAWSKI, A.; UZAREWICZ, I.

The electronic spectra of 4-methyl-7-oxycoumarin in various alcohols. Bul Ac Pol mat 11 no. 9:625-628 '63.

1. Lehrstuhl fur Physik, Padagogische Hochschule, Gdansk und Lehrstuhl fur Organische Chemie, M. Kopernik Universitat, Torun. Vorgelegt von A. Jablonski.

L 18889-63 EWT(1)/BDS AFFTC/ P/0047/63/014/002/0191/0207

ACCESSION NR: AP3001752 ASD/SSD

54

AUTHOR: Kawski, Alfous; Polacka, Bagumila

TITLE: Methods for measuring the luminous efficiency of solutions

SOURCE: Postepy fizyki, v. 14, no. 2, 1963, 191-207

TOPIC TAGS: photoluminescence, luminous efficiency, quantum yield, glycogen

ABSTRACT: Authors review existent literature pertaining to methods of measuring luminous efficiency of solutions. Seven methods are described. Theoretical assumptions, figures and equations are reproduced from the cited references. Authors present nothing new, limiting themselves to describing what others have done in this field. Orig. art. has: 10 figures, 1 table and 39 equations.

ASSOCIATION: Katedra Fizyki Wyzszej Pedagogicznej w Gdansku (Department of Physics, Gdansk Pedogogical Institute)

SUBMITTED: 00 DATE ACQ: 12Jun63 ENCL: 00

SUB CODE: PH NO REF SOV: 001 OTHER: 018

Card 1/1

KAWSKI, A.

Data on the question relating to the sphere of action in the theories concerning the concentration- depolarization of fluorescence. Acta phys Hung 16 no.3: 293-294 '63.

1. Physikalisches Institut der Padagogischen Hochschule, Gdansk, Poland.

KAWSKI, A.

Extinction of fluorescence by intramolecular energy transmission. Acta physica Pol 24 no.5: 641-649 N'63.

1. Physikalisches Institut, Pädagogische Hochschule, Gdansk.

KAWSKI, A.

Intermolecular transmission of excitation energy in fluoreqcein plexiglas solutions. Bul Ac Pol mat 12 no.3:173-178 '64

Electric dipole momentum changes of naphthol in naphthylamine. Bul Ac Pol mat 12 no.3:179-182 '64.

1. Department of Physics, Teachers College, Gdansk. Presented by A. Jablonski.

KAWSKI,A.

Influence of polar molecules on the electron spectra of 4-aminophthalamid. Acta physica Pol 25 no.2:285-290 F '64

1. Physikalisches Institut der Pädagogischen Hochschule, Gdansk.

KAWSKI, A.; BILOT, L.

Spectroscopic determination of electric dipolemoments of aromatic compounds in the first stimulated singlet state. Acta physica Pol 26 no.1:41-45 Jl '64.

1. Institute of Physics, Teachers College, Gdansk.

POLAND

KAWSKI, Alfons

Dept. of Physics, Higher Normal School (Katedra Fizyki Wyzszej Szkoly Pedagogicznej), Gdansk

Crakow, Postepy fizyki, No 5, Sep-Oct 1965, pp 579-601

"Investigation of the dipole molecular electric moments for excited states."

L 13372-66

ACC NR: AP6002070 SOURCE CODE: PO/0045/65/0028/006/0809/0822

AUTHOR: Kawski, A.; Stefanowska, U. 32 B

ORG: Department of Physics, Pedagogic Institute, Gdansk (Katedra Fizyki, Wyzsza Szkola Pedagogiczna)

TITLE: Investigations on the Anomalous Stokes' red Shift of the absorption and fluorescence spectra of 4-aminophthalimide as a function of the mixing ratio of nonpolar and polar solvents

SOURCE: Acta physica polonica, v. 28, no. 6, 1965, 809-822

TOPIC TAGS: line shift, absorption spectrum, fluorescence spectrum, organic solvent, amino acid, WAVE NUMBER

ABSTRACT: After a brief review of past work, the paper presents and discusses the results of measurements of Stokes' shift to the red of the wave number of the maxima of the absorption and fluorescence spectra of 4-aminophthalimide dissolved in two-component mixtures as a function of the ratio of the components used; in each case, one of the components was polar and the other nonpolar. The ratio of the components was

Card 1/2

2

L 13372-66
ACC NR: AP6002070

chosen to give a known dielectric constant and refractive index. The following two-component mixtures were used: benzene+methanol (I), carbon tetrachloride+acetone (II), benzene+chloroform (III) and carbon tetrachloride+chloroform (IV). Diagrams presented show curves of the absorption and fluorescence spectra of 4-aminophthalimide dissolved in the mixtures having different concentrations of the components and wave numbers of the maxima of fluorescence versus the wave numbers of the long-wavelength maxima of absorption as obtained from the curves.

SUB CODE: 07,20 / SUBM DATE: 27May65 / ORIG REF: 003 / OTH REF: 004 /

SOV REF: 003

Card 2/2

L 26048-66 IJP(c) JD/JH
ACC NR: AP6000646 SOURCE CODE: PO/0045/65/028/002/0271/0283

AUTHOR: Kawski, A.; Korba, M.; Szymkowiak, H.

ORG: The Physical Institute of the Pedagogical University (Physikalisches Instytut der Padagogischen Hochschule, Gdańsk)

TITLE: Investigations of the emission of layer luminophores with aluminum oxide as the base material and organic activators: 7-oxycumarin,4-methyl-7-oxycumarin and 4-amino phthalimide

SOURCE: Acta physica polonica, v. 28, no. 2, 1965, 271-283

TOPIC TAGS: phosphor, luminophor, luminescence spectrum, .. , luminescence quenching , phosphorescence, aluminum oxide, emission spectrum, photoluminescence

ABSTRACT: Experiments to prepare layer luminophores using aluminum oxide as a base material and organic activators are described. The investigation was undertaken because it seemed of particular interest as a contribution to a better understanding of aluminum oxide luminophores to choose such activators which, when they are used, make the overlapping of the absorption and fluorescence spectra insignificant. The overall emission spectra and phosphorescence spectra of the organic activators in aluminum oxide were measured at room temperature and at the temperature of liquid air. The preparation of the luminophores is described and the measurement method and re-

Card 1/2

L 26048-66

ACC NR: AP6000646 O

sults are discussed. The position of the phosphorescence spectrum in comparison with the position of the fluorescence spectrum is very little dependent on the solvent for the compounds investigated even though the dielectric constants (ε = 2.7 - 3.2 and ε = 7.4 - 7.6) of the activators used are clearly different. Further investigations of the quenching and polarization of the photoluminescence of aluminum oxide phosphores are in progress. Orig. art. has: 1 table and 16 figures.

SUB CODE: 20 / SUBM DATE: 10Mar65 / ORIG REF: 001 / OTH REF: 010 /
SOV REF: 001

Card 2/2 pla

L 34667-66 EWT(1) IJP(c)

ACC NR: AP6014318 SOURCE CODE: PO/0045/66/029/004/0507/0518

41
40
B

AUTHOR: Kawski, A.

ORG: Physics Institute of the Pedagogical High School, Danzig (Physikalisches Institut der Padagogischen Hochschule)

TITLE: Dependence of the wave number of the electron bands on the solvent of luminescent molecules and the determination of the electrical dipole moments in the excited state

SOURCE: Acta physica polonica, v. 29, no. 4, 1966, 507-518

TOPIC TAGS: wave number, dipole moment, solution property, solvent action, molecule, luminescence, luminescent material

ABSTRACT: The article discusses and compares the equations for the difference of the absorption and emission wave numbers or the wave number difference of the absorption and fluorescence maxima for molecules dissolved in various solvents, or which have been obtained from various theories (Bakhshiev, 1961, Bilot and Kawski, 1962, Lippert, 1957, etc.). By taking into account only the linear Stark effect in the Bilot-Kawski theory, the Liptay equation is obtained which in the particular case changes into the Mac Rae equation. On the other hand, when it is assumed that $\frac{\alpha}{a^3} = \frac{1}{2}$, where α is the polarisability and a the interaction radius, the general

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L 34667-66

ACC NR: AP6014318

Bilot-Kawski equation (when the linear and quadratic Stark effects are taken into account) is equal to the Bakhshiev equation. The Lippert equation is derived by neglecting the polarisability term in the equations mentioned above. Using these equations the dipole moments in the first excited singulet state were determined for various solvents and the results compared with values obtained by other methods. The radius of interaction a was considered as an empirical parameter on the order of the molecular radius of the substance in solution. "I thank Miss B. Paaztor for her help in the computation of the tables." Orig. art. has 6 figures, 25 formulas and 6 tables.

SUB CODE: 07,20/ SUBM DATE: 10Nov65/ ORIG REF: 003/ SOV REF: 002/ OTH REF: 014

2/2 Card

L 39660-66 GD-2
ACC NR: AP6001445 SOURCE CODE: PO/0045/65/028/005/0647/0652

AUTHOR: Kawski, A.

ORG: Physikalisches Institut der Padagogischen Hochschule, Gdansk (Physical Institute of the Pedagogical School of Technology)

TITLE: The anomalous Stokes red shift of the absorption and fluorescence maxima of 4-amino phthalimide in a dioxan and water mixture

SOURCE: Acta physica polonica, v. 28, no. 5, 1965, 647-652

TOPIC TAGS: spectral line, line shift, spectrum analysis, absorption spectrum, fluorescence spectrum

ABSTRACT: The effect is investigated of a solvent mixture consisting of a polar (water) and nonpolar (dioxan) component on the shift of the absorption and fluorescence bands of 4-amino phthalimide and the results are compared with what is theoretically predicted. The present study is a continuation of an earlier investigation in which the author sought to determine the effect of various solvents on the position of the absorption and fluorescence maxima on 4-amino phthalimide. In this investigation the measurement of the absorption and fluorescence maxima of 4-amino phthalimide in various proportions of dioxan and water are compared with the theory of the effect of various solvents on the electron spectrum of molecules in solution and found to be in

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ACC NR: AP6001445

good agreement. Further investigations are in progress. "We thank Mr. K. Kierunczyk for his technical help in carrying out this investigation". Orig. art. has 4 figures, 6 formulas and 1 table.

SUB CODE: 07, 20/ SUBM DATE: 26Apr65/ ORIG REF: 005/ OTH REF: 005/

Card 2/2 4.5

L 06244-67 RM

ACC NR: AP6019939 SOURCE CODE: PO/0045/66/029/002/0177/0186

46
45
B

AUTHOR: Kawski, A.; Kolakowski, W.

ORG: Physics Department of WSP, Danzig (Katedra Fizyki WSP)

TITLE: Temperature dependence of 4-amino-phthalimide absorption and fluorescence spectra

SOURCE: Acta physica polonica, v. 29, no. 2, 1966, 177-186

TOPIC TAGS: absorption spectrum, fluorescence spectrum, temperature dependence, electron spectrum, spectrum, HETEROCYCLIC BASE COMPOUND

ABSTRACT: The absorption and fluorescence spectra of 4-amino-phthalimide in ethyl acetate and iso-aminol were measured at temperatures from 20 to 200 C. The shifts in absorption and fluorescence maxima with change in temperature were explained by the effect of various solvents on the electron spectrum of the fluorescent molecule. The measurement results show that 1) the wave number of the fluorescence maximum of 4-amino-phthalimide in ethyl acetate is much more temperature dependent than that of the absorption maximum while in iso-aminol the temperature dependence of the fluorescence and absorption maxima is the same, and 2) the dielectric constants ε of

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ACC NR: AP6019939

"APPROVED FOR RELEASE: 06/13/2000 CIA-RDP86-00513R000721220006-1

ethyl acetate and iso-aminol vary with temperature from 6.1-3.5 and from 15.3-8, respectively. The experimental data are found to be in good agreement with the theoretical data. The measurement results are presented in tabular form. The authors thank Eng. M. Wysokinski for providing the special vessel used in carrying on the measurements. Orig. art. has: 11 figures, 2 tables, and 8 formulas.

SUB CODE: 20,07/ SUBM DATE: 11Aug65/ ORIG REF: 006/ SOV REF: 004/ OTH REF: 002

Card 2/2 egh

KAYA, T. P. (Ing.)

Doz. Y. A. Bolotovskiy, Ing. T. P. Kaya, and Ing. M. E. Smirnov, "The Choice of Profile Displacement Coefficients in Involute Gears."

paper presented at the 2nd All-Union Conf. on Fundamental Problems in the Theory of Machines and Mechanisms, Moscow, USSR, 24-28 March 1958.

ANDZHEYEVSKAYA, L. [Andrzejewska, L.]; KAYAK, A. [Kajak, A.]

Comparing the Homoptera and Araneae of cultivated and natural meadows. Vop. ekol. 7:4-5 '62. (MIRA 16:5)

1. Institut ekologii Pol'skoy Akademii nauk, Varshava.
(Biebrza Valley--Homoptera) (Biebrza Valley--Spiders)

KAYAK, K.F. [Kajak, K.]

Marginal glacial formations in southeastern Estonia. Trudy Kom. chetv. per. 21:66-75 '63. (MIRA 16:10)

1. Upravleniye geologii i okhrany nedr pri Sovete Ministrov Estonskoy SSR.

KAYAK, L.K.

Using geodetic techniques in the measurement of long linear dimensions in mechanical engineering. Trudy VNIIM no.12:87-101 '51. (MIRA 11:6)

(Length measurement)

ROMANOVA, M.F.; VOLKOVA, Ye.A.; KAYAK, L.K.

Comparing the length of meter state-standard length with the wave length of cadmium red line. Trudy VNIIM no.16:4-12 '51. (MLRA 11:6)
(Metric system--Standards)
(Light--Wave length)

KAYAK, L.K.

[redacted]condition of standard length measures. Trudy VNIIM no.18:69-70 '52. (MIRA 11:6)

(Length measurement--Standards)

KAYAK, L.K.

Improved method for checking length standrads. Trudy VNIIM no.20: 23-59 '53. (MIRA 11:6)

(Length measurement--Standard)

KAYAK, L. K

BOGUSLAVSKIY, M.G.; KAYAK, L.K.

A wire length-measuring gauge. Izm. tekh. no.2:28-31 Mr-Ap '55. (MIRA 8:9)

(Measuring instruments)

KAYAK, L. K.

KAYAK, L.K.

Standardization work of the All-Union Scientific Research Institute of Metrology in the field of measuring lengths, masses, and time. Izm. tekh. no.6:21-24 N-D '57. (MIRA 10:12)
(Weights and measures--Standards)

ARUTYUNOV, V. O., GORDOV, A. N., KAYAK, L. K., YANOVSKIY, B. M.

"Neueste Ergebnisse und Richtungen der Entwicklung der Metrologie"

report presented at the
Intl. Measurements Conference (IMEKO) Budapest, 24-30 November ~~1960~~ 1958

KAYAK, L. K.

Kayak, L. K. (Leningrad). Methods for Measuring Great Lengths p. 209

Interchangeability, Accuracy and Measuring Methods in Machine Building, Moscow, Mashgiz, 1958, 251 pp. (Sbornik Nauchno-tekh. obshch. mashinostroitel'noy promyshlennosti, Leningradskoye oblast pravleniya, kn. 47).

This collection of articles deals with the topics discussed at the 3rd Leningrad Sci. and Engineering Conference on Interchangeability, accuracy and Inspection Methods in Machine-building and Instrument-making, held 18-22 Mar 1957.

KAYAK, L. K.

24(0); 5(4); 6(2) PHASE I BOOK EXPLOITATION SOV/2215

Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii imeni D.I. Mendeleyeva

Referaty nauchno-issledovatel'skikh rabot; sbornik No. 2 (Scientific Research Abstracts; Collection of Articles, Nr 2) Moscow, Standartgiz, 1958. 139 p. 1,000 copies printed.

Additional Sponsoring Agency: USSR. Komitet standartov, mer i izmeritel'nykh priborov.

Ed.: S. V. Reshetina; Tech. Ed.: M. A. Kondrat'yeva.

PURPOSE: These reports are intended for scientists, researchers, and engineers engaged in developing standards, measures, and gages for the various industries.

COVERAGE: The volume contains 128 reports on standards of measurement and control. The reports were prepared by scientists of institutes of the Komitet standartov, mer i izmeritel'nykh priborov pri Sovete Ministrov SSSR (Commission on Standards,

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Measures, and Measuring Instruments under the USSR Council of Ministers). The participating institutes are: VNIIM - Vsesoyuznyy nauchno-issledovatel'skiy metrologii imeni D.I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D.I. Mendeleyev) in Leningrad; Sverdlovsk branch of this institute; VNIIK - Vsesoyuznyy nauchno-issledovatel'skiy institut Komiteta standartov, mer i izmeritel'nykh priborov (All-Union Scientific Research Institute of the Commission on Standards, Measures, and Measuring Instruments), created from MGIMIP - Moskovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Moscow State Institute of Measures and Measuring Instruments) October 1, 1955; VNIIFTRI - Vsesoyuznyy nauchno-issledovatel'skiy institut fiziko-tekhnicheskikh i radiotekhnicheskikh izmereniy (All-Union Scientific Research Institute of Physicotechnical and Radio-engineering Measurements) in Moscow; KhGIMIP - Khar'kovskiy gosudarstvennyy institut mer i izmeritel'nykh priborov (Khar'kov State Institute of Measures and Measuring Instruments); and NGIMIP - Novosibirskiy gosudarstvenyy institut mer i izmeritel'nykh priborov (Novosibirsk State Institute of Measures and Measuring Instruments). No personalities are mentioned. There are no references.

Card 2/27

KAYAK, L. K.

ROMANOVA, M.F.; IPPITS, M.D.; KAYAK, L.K.; RUDO, N.M.; TOVCHIGRECHKO, S.S.

Present condition and prospects for development of standardization in the field of length, mass, and time measurements. Trudy VNIIM no.33:14-38 '58. (MIRA 11:11)

1. Rukovoditel' otdela osnovnykh yedinits Vsesoyuznogo nauchno-issledovatel'skogo instituta metrologii imeni D.I. Mendeleyeva (for Romanova)

(Measuration)

RUBINOV, Aleksandr Davidovich; KAYAK, L.K., kand.tekhn.nauk, retsenzent; ABADZHI, K.I., inzh., red.; BORODULINA, I.A., red.izd-va; SOKOLOVA, L.V., tekhn.red.;

[Large-scale measurements in the machinery industry] Izmerenie bol'shikh razmerov v mashinostroenii. Izd.2., perer. i dop. Moskva, Gos.nauchno-tekhn.izd-vo mashinostroit.lit-ry, 1959. 182 p. (MIRA 12:3)

(Machinery--Measurement) (Gauges)

25(6)

S/115/60/000/02/031
D002/D003

AUTHORS: Kayak, L.K., Toropin, S.I.

TITLE: Photoelectric Microscopes for Checking Line Standards

PERIODICAL: Izmeritel'naya tekhnika, 1960, Nr 2, pp 3-5 (USSR)

ABSTRACT: The method of checking line standards by means of special photoelectric microscopes is under development in the USSR and abroad, e.g. in Switzerland [Ref 1], and England [Ref 2]. This work was continued at VNIIM. The article contains information on the test unit of a photoelectric microscope (Figure 1) used not only for focussing on the line but also for direct measurement of length differences compared on the line-standard comparator. The working principle is the following: When the moving image of the "STs79" lamp's filament passes over the line of the line standard, the light flow is reduced, and this is recorded by a photocell converting the light flow change into an electric signal. On the screen

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S/115/60/000/008/012/013
B019/B063

AUTHOR: Kayak, L. K.

TITLE: Conference on Methods of Measuring Lengths and Angles

PERIODICAL: Izmeritel'naya tekhnika, 1960, No. 8, pp. 59 - 60

TEXT: A nauchno-tekhnicheskoye soveshchaniye po voprosam primeneniya opticheskikh metodov dlya izmereniya dliny i uglov (Scientific and Technical Conference on Problems of the Use of Optical Methods for Measuring Lengths and Angles) took place in Leningrad from June 1 to 4, 1960. It had been convened by the Leningradskoye oblastnoye pravleniye NTO priborostroitel'noy promyshlennosti (Leningrad oblast' Administration of the NTO of the Instrument-building Industry), the Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D. I. Mendeleyeva (All-Union Scientific Research Institute of Metrology imeni D. I. Mendeleyev), the Gosudarstvennyy opticheskiy institut im. S. I. Vavilova (State Institute of Optics imeni S. I. Vavilov), and the Tekhniko-ekonomicheskiy sovet Leningradskogo sovnarkhoza (Technical and Economic Council of the Leningrad sovnarkhoz). The Conference was attended by more than

Conference on Methods of Measuring Lengths and Angles

S/115/60/000/008/012/013
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250 delegates of research institutes and factories manufacturing optical instruments as well as of various institutes and establishments using optical instruments. The delegates came from Moscow, Leningrad, Kiyev, Sverdlovsk, Novosibirsk, Khar'kov, and other cities. 30 lectures were delivered by representatives of the above-mentioned institutes and the NGIMIP. Lectures by Yu. V. Kolomiytsov - "The Direction of the Development of Optical Instruments for Measuring Lengths and Angles" - and N.F.Delyunov and E. I. Rozenberg - "Instruments of the GOMZ for Measuring Lengths and Angles" - dealt with problems to be solved by research institutes and industrial establishments within the next few years. A. I. Inyushin and F. P. Volosevich gave a report on "Domestic Optical Measuring Instruments at the Exhibitions of Brussels (1958) and New York (1959)". The Kirovskiy zavod (Kirov Factory) (Leningrad) is mentioned in this connection. Druzhinin spoke about "The Use of Optical Methods for Measuring Lengths and Angles of Medium- and Large-size Parts and Units". A. I. Kartashev described "Optical Systems of High Resolution" and I. A. Greym "Optical Systems With Double Scales for Measuring Lengths and Angles". N. R. Batarchukova held a lecture on "The Accuracy of the Reproduction of New Standards of the Unit of Length". M. L. Brzhezinskiy and N.V.Trofimova

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reported on "Interference Instruments for the Measurement of Line Standards" and A. I. Kartashev on "Interference Comparators". The Odinadtsataya General'naya konferentsiya po meram i vesam (11th State Conference on Measures and Weights) is mentioned in this connection. This conference, which is intended to be held in October, 1960, is to give a new definition of the meter on the basis of the orange line of Kr^{86}. Lectures of A. N. Zakhar'yevskiy, I. I. Dugoyel, and Yu. V. Kolomiytsov dealt with the development of new interferometers for measuring the roughness of machined surfaces. V. P. Koronkevich and Yu. I. Trulev spoke about the use of a counter of interference lines. The introduction of photoelectric methods into control was analyzed in lectures by A. I. Kartashev, N. R. Bartachukova, and Yu. I. Trulev - "A Photoelectric Comparator" - , A. I. Inyushin, Yu. V. Kolomiytsov, L. Ye. Korol'kova, G. V. Rodkevich, and D. M. Frolov - "Photoelectric Methods of Checking the Geometrical Parameters of Optical Parts" - and Yu. V. Kolomiytsov, V. G. Potupikov, and L. Ye. Korol'kova - "A Contactless Phasometric Method of Measuring the Thickness of Parts". Lectures by L. M. Alabovskaya - "Methods of Measuring Angles on a Horizontal Meridian Circle" - , L. L. Brzhezinskiy, and N. V. Trofimova were devoted to problems connected with the application of

Conference on Methods of Measuring Lengths and Angles

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photoelectronics. V. P. Linnik, T. S. Kolomiytsova, and I. V. Novikova, as well as Yu. P. Yefremov and Yu. I. Trulev spoke about photoelectric methods of recording interference lines. G. I. Strakun, M. F. Grechko, L. I. Smirnov, and Ye. Ye. Sharov reported on "Standard Instruments for Measuring Angles". L. A. Nikolayeva spoke about "New Domestic Instruments for Measuring Angles", V. P. Golubkov and Ye. I. Finkel'shteyn about "Autocollimators Developed by the Soviet Industry and State Research Centers", V. P. Linnik and G. V. Rodkevich about the application of interference for measuring angles. Institutes of optics and mechanics as well as factories were critized for various drawbacks and the insufficient pace of the modernization of instruments. In their resolution, the delegates of the Conference recognized the high level of instrument construction and showed various ways of eliminating technical drawbacks. Furthermore, the delegates recommended the establishment of an interdepartmental commission for optical measuring instruments in order to coordinate scientific research work, construction, and to judge new instruments, etc.

Card 4/4

KAYAK, L.K.

Some changes in regulations on testing and using gauge blocks. (MIRA 14:5)
Izm.tekh. no.6:1-5 Je '61.
(Length measurement)

KAYAK, L.K.

Standards of length and their comparison. Trudy inst.Kom.stand.,mer i izm.prib no.47:23-38 '61. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.

(Length measurement)

KAYAK, L.K.; TOROPIN, S.I.

The thirty-meter interference comparator of the All-Union Research Institute of Metrology. Trudy inst.Kom.stand.,mer i izm.prib no.47: 92-112 '61. (MIRA 15:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut metrologii im. D.I.Mendeleyeva.
(Length measurement)

BOGUSLAVSKIY, M.G.; KAYAK, L.K.

Precision in measuring lengths a angles in the manufacture of machinery. Izm.tekh. no. 4:26-28 Ap '64. (MIRA 17:7)

ACCESSION NR: AP4001642 S/0115/63/000/011/0001/0005

AUTHOR: Kayak, L. K.

TITLE: The status and tasks of metrology in the field of linear and angular measurements

SOURCE: Izmeritel'naya tekhnika, no. 11, 1963, 1-5

TOPIC TAGS: metrology, geodetic instrumentation, geodetic instrumentation accuracy, geodetic instrumentation calibration, geodetic instrument standardization, linear measurement accuracy, angle measurement accuracy, geodetic instrument standardization problem, geodetic instrument accuracy improvement, standard bar, linear measurement standardization automation, angle measurement standardization automation

ABSTRACT: A short review is presented of modern standards and displacement and angle measuring methods. Mean square errors of comparison of various standards of length and of methods of calibration of the standards are shown as $\sigma = f(l)$ curves. It is reported that the highest accuracy of measuring length attainable involves an error of 10^{-8} m. For 20 years, VNIIM has regularly checked interferometers at various Soviet metrological institutes by measuring

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ACCESSION NR: AP4001642

the same standards of length on them (up to 100 mm); now, the practice will include the standards up to 1 m long. Quantum electronic devices (lasers, etc.) are expected to be widely used in metrology in the near future. The velocity of light measurement with an error of 10^{-9} would permit still greater accuracy in the measuring of the standard meter. It is desirable that the permissible error for first-class reference standards be set at ±0.1 or 0.2 microns and that correspondingly higher errors be established for less precise standards. It is also desirable that the checking of secondary standards be made by automatic means. Standard and reference angular measures have an error of about ±0.1"; however, working reference standards have an error of not better than ± 2 or 3", while at least ±0.5 or 1" is desirable. It is also stated that precise dilatometers with an error of about $\pm 5 \times 10^{-8}$ are needed. Orig. art. has: 2 figures.

ASSOCIATION: none

SUBMITTED: 00 DATE ACQ: 26Dec63 ENCL: 00

SUB CODE: AS NO REF SOV: 003 OTHER: 001

Card 2/2

L 34008-66 EWT(d)/EWT(m)/EWP(w)/EWP(v)/EWP(k)/EWP(h)/EWP(l) IJP(c) EM

ACC NR: AR6017183 SOURCE CODE: UR/0058/65/000/012/A023/A023

AUTHOR: Kayak, L. K.; Koroleva, A. N.

TITLE: Dilatometric measurements

SOURCE: Ref. zh. Fizika, Abs. 12A233

REF SOURCE: Tr. in-tov Gos. kom-ta standartov, mer i izmerit. proborov SSSR, vyp. 76(136), 1965, 127-134

TOPIC TAGS: scientific standard, metrology, measurement, elongation, thermal expansion, interfrence measurements, research facility

ABSTRACT: The problem of dilatometric measurements in metrology practice reduces to two types of problems: 1) Investigations aimed at determining the values of the temperature coefficients of elongation of length standards, the accuracy of which determines the accuracy of the measurements of the standards; 2) development of methods and instruments for the determination of the temperature coefficients of elongation of samples of different materials for the study of the physical properties of these materials in a broad range of temperatures. The article reports work done by VNIIM in the field of dilatometric measurements, particularly the development of dilatometric apparatus for the determination by an absolute method, of the temperature coefficients of elongation of plane-parallel gauge blocks 100 - 1000 mm long in the temperature interval -5 - +35C. Also described is an interference dilatometer for the determination of the temperature coefficient of elongation of samples of differ-

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ACC NR: AR6033765 SOURCE CODE: UR/0058/66/000/007/A020/A020

AUTHOR: Kayak, L. K.; Toropin, S. I.; Trishin, N. V.; Yachmentsev, O. V.

TITLE: Double photoelectric microscope for comparing subdivisions of caliper measures of length qm

SOURCE: Ref. zh. Fizika, Abs. 7A173

REF SOURCE: Tr. in-tov Gos. kom-ta standartov, mer i izmerit. priborov SSSR, vyp. 78(138), 1965, 49-63

TOPIC TAGS: microscope, error measurement, measurement

ABSTRACT: A double photoelectric microscope and special electronic equipment for measuring the differences in length of comparable caliper measures are described. An investigation of measurement accuracy is carried out. The use of the device increases the efficiency of comparison by a considerable factor and permits the reduction of measurement errors. Bibliography of 10 titles. Ye. Kiyaev. [Translation of abstract]

SUB CODE: 14/

Card 1/1

ACC NR: AT7000581 SOURCE CODE: UR/2589/65/000/078/0049/0063

AUTHOR: Kayak, L. K.; Toropin, S. I.; Trishin, N. V.; Yachmentsev, O. V.

ORG: VNIIM

TITLE: Dual photoelectric microscope for comparison of divisions on linear scales

SOURCE: USSR. Komitet standartov, mer i izmeritel'nykh priborov. Trudy institutov Komiteta, no. 78(138), 1965. Issledovaniya v oblasti lineynykh izmereniy (Research in the field of linear measurements), 49-63

TOPIC TAGS: ~~photoelectric~~ microscope, photoelectric method, photoelectric tracking, optic scanning, photoelectric scanning, automatic scale reading equipment, metrology

ABSTRACT: A dual photoelectric scale comparator miscroscope for direct measurement of linear displacement differences between two scales is described. This instrument has the advantage over the majority of photoelectric microscopes designed for line alignment in that it generates through electronic means a direct readout of the difference between two linear scales under comparison. This is possible due to the conversion of linear displacement into the corresponding time interval that can be very accurately measured by conventional methods. The principle of operation is as follows: The images of lines on the scale are scanned by means of a vibrating mirror in the plane of a fixed slit. At the instant of the crossing of the slit by the line image the light

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flux is modulated, and a photodetector converts the modulated light into electrical impulses. An electrical coincidence circuit generates an output pulse if, and only if the pulses generated during the forward and during the reverse motion of the mirror coincide, i. e., the optical axis of the instrument coincides with the center of the line being scanned. There are two independent scanning systems, one for each scale, which are identical in construction and operation. When the position of two lines on two scales is compared the pulse which occurs first, when both scanners traverse their respective scales (the scales are mounted on precision tables driven at uniform speed through lead screws), opens a gate which admits pulses from a calibrated pulse generator into a bidirectional counter. The second pulse from the photoelectric microscope turns the gate off. The relation between the pulse repetition rate, the scanning speed, and the units of length is accurately known and fixed. Hence, the pulse count displayed on the counter is an accurate measure of the difference in the position of the marks on the two scales being compared. Two versions of the instrument are described: one for comparing two parallel scales, the other for scanning two scales located one behind the other on the same axis. The optical system of the latter version is shown in Figure 1. The scales *7* and *7'* are illuminated by the light source *3*. Two identical optical systems image the scale lines into the plane of two fixed slits *1* and *1'*, respectively. The scanning of the line images across the fixed slits is due to the motion of the vibrating mirrors *8* and *8'*. The modulated light is converted into electrical signals by the photodetectors *4* and *4'*. The authors have experimentally investigated the accuracy of both systems and found it to be well below one micron

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ACC NR: AT7000581

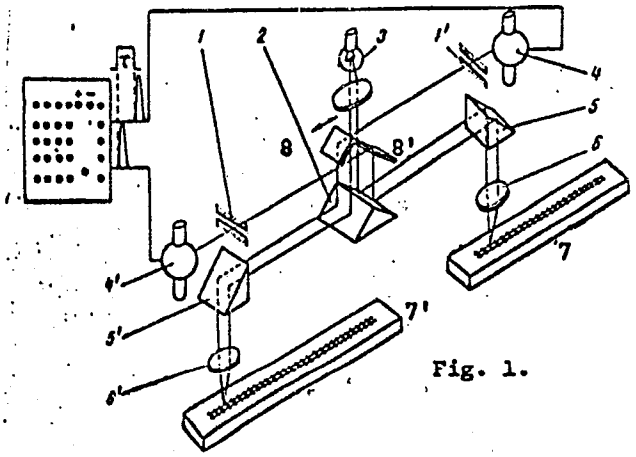


Fig. 1.

(total error). The effects of various instabilities in the optical, mechanical, and electronic systems on the magnitude of error are discussed and the results of actual measurements included. Orig. art. has: 7 figures, 4 tables.

SUB CODE: 09,14/ SUBM DATE: 08Jul64/ ORIG REF: 008/ OTH REF: 002

Card 3/3

KAYAK, Z.

Investigation of the methods of collecting benthos. Vop. ekol. 4: 111-113 '62. (MIRA 15:11)

1. Institut ekologii Pol'skoy akademii nauk, Varshava.
(Benthos)

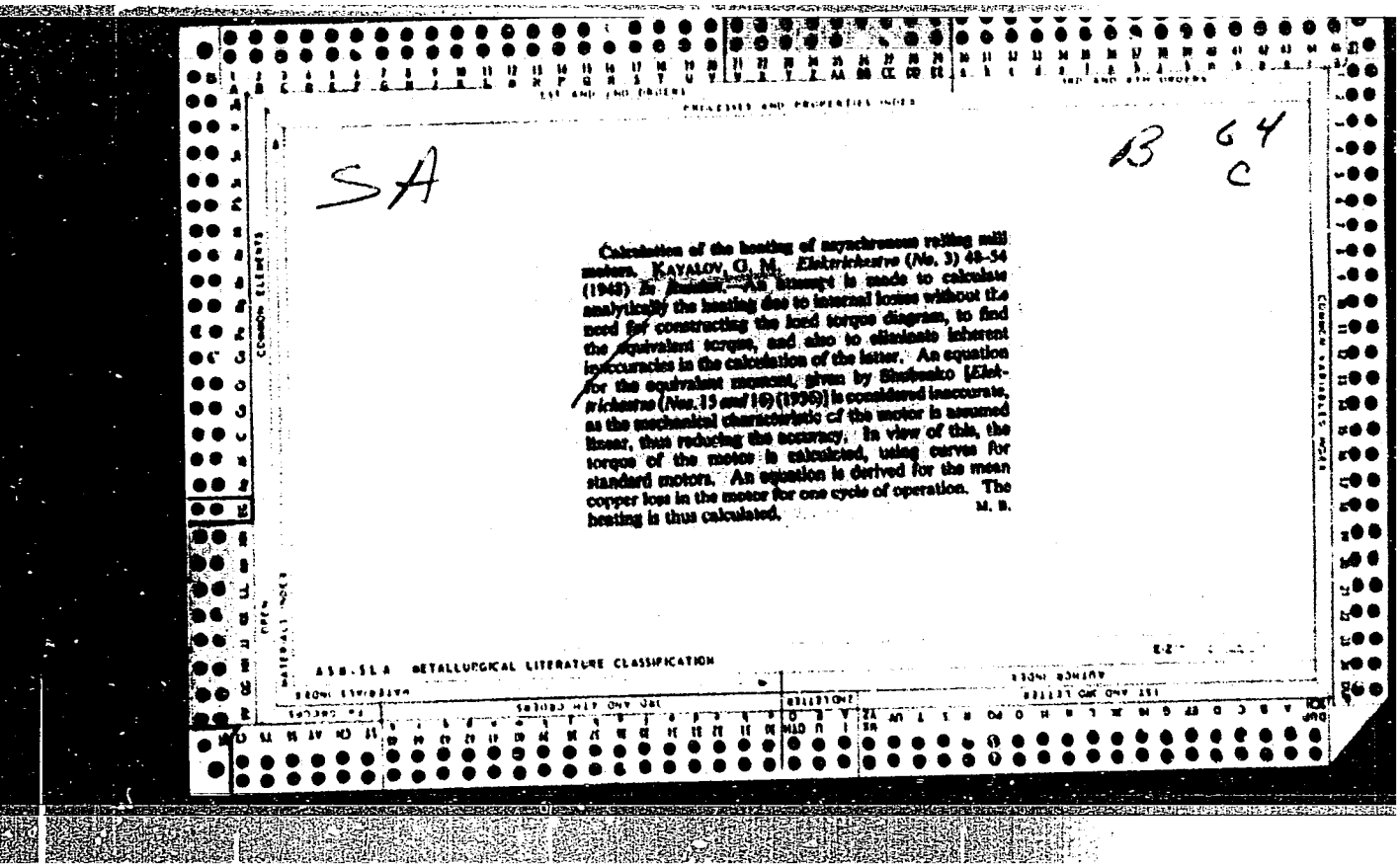
KAYAKHUNOV, Ya. K.

Dissertation: "Search for an Effective Method of Treatment and the Development of Comprehensive Measures for the Eradication of Epizootic Lymphangioitis in Horses." Cand Vet Sci, Alma-Ata Zooveterinary Inst, 27 May 54. Kazakhstanskaya Pravda, Alma-Ata, 15 May 54.

SO: SUM 284, 26 Nov 1954

NAUMENKO, A.I.; KAYALINA, L.N.

Effect of rarefied air in a pressure chamber on patients with whooping cough. Sov. med. 27 no.3:109-112 Mr '64. (MIRA 17:11)



SA

13 64
C

Calculation of the heating of asynchronous rolling mill motors. KAYALOV, G. M. *Elektrichestvo* (No. 3) 48-54 (1948) In Russian.—An attempt is made to calculate analytically the heating due to internal losses without the need for constructing the load torque diagram, to find the equivalent torque, and also to eliminate inherent inaccuracies in the calculation of the latter. An equation for the equivalent moment, given by Shubenko [*Elektrichestvo* (Nos. 15 and 16) (1936)] is considered inaccurate, as the mechanical characteristic of the motor is assumed linear, thus reducing the accuracy. In view of this, the torque of the motor is calculated, using curves for standard motors. An equation is derived for the mean copper loss in the motor for one cycle of operation. The heating is thus calculated. M. B.

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

KAYALOV, G. M.

Kayalov, G. M. - "On the effective distribution of rolling reductions between passages of non-reversing machine with flywheel," Trudy Novocherkas. politekhn. in-ta im. Ordzhonikidze, Vol. SVIII, 1948, p. 45-49.

SO: U-3850, 16 June 53, (Letopis 'Zhurnal 'nykh Statey, No. 5, 1949).

KAYALOV, G.M. DOCENT

USSR/Electricity
Power Plants, Electric
Distributors

"New 6 - 10 Kilowatt Distributor System," L.E. Ivanov, Docent G.M. Kayalov, G.M. Yavich, Engr, 3¼ PP

"Elek Stants" No 2

Refers to L. I. Dvoskiy's article on construction of main distributor systems of 6 - 10 kw for electric stations and regional substations. Reveals a new construction guaranteeing considerable decrease of the structure's cubic capacity, due to more rational arrangement, without changing performance. Gives circuit-layout construction plan.

PA 41/49T14

158T29

KAYALOV, G. M.

USSR/Electricity - Electric Drives Apr 50
Motors, Induction

"Theory and Design of an Efficient Electric Drive With a Flywheel," Docent G. M. Kayalov, Cand Tech Sci, Novocherkassk Polytech Inst, 7 pp

"Elektrichestvo" No 4

Explains general method of determining parameters of electric drive with induction motor and flywheel without regulator (power, nominal slip of electric motor, GD^2 of flywheel), such that they will be the best from standpoint of specific power expenditure per unit of production or from standpoint of specific operational expenditures. Theory

158T29

USSR/Electricity - Electric Drives Apr 50
(Contd)

proceeds from curvilinear mechanical characteristic of induction motor and contains many formulas which simplify calculations. Submitted 21 Nov 49.

158T29

KAYALOV, G. M.

178T65

USSR/Electricity - Distribution Systems Apr 51
Load Analysis

"Principles of the Load Analysis and Calculation of Power Networks of Industrial Enterprises," Docent G. M. Kayalov, Cand Tech Sci, Novocherkassk Polytech Inst imeni Ordzhonikidze

"Elektrichestvo" No 4, pp 28-37

Suggests method for detn and investigation of cald loads of power networks. Method is based upon theory of probability and math statistics. Submitted 10 Jan 51.

178T65

KAYALOV, G. M., Docent; SHNITSER, L. M.

Electric Power Distribution

Remarks to S. M. Livshits' article: "Calculating and examining industrial electrical loads." Elektrichestvo No. 3, 1953.

Monthly List of Russian Accessions, Library of Congress, June 1953. Uncl.

Electrical Engineering Abst.
Section B
March 1954
Supply. Generation
Power Stations.
Substations.

621.311.15

419. Experimental treatment of industrial power supply problems. G. M. KAYALOV. *Elektrichestvo*, 1953, *No.* 5, 7-12. *In Russian.*

A system of parameters for industrial power-consuming devices is presented which are claimed to be easier to determine and to allow a more continuous assessment of the industrial loads than the usual methods of investigation. It is shown that the conventional way of determining the reactive power of the consuming devices, and thus the reactive energy consumption, does not correspond to practical conditions and must be redefined. The theory of the method of determining the new parameters is given in detail.

B. F. KRAUS

Novocherkassk Polytech. Inst. im. Ordzhonikidze.

LIVSHITS, S.M., inzhener; KAYALOV, G.M., kandidat tekhnicheskikh nauk; GEYLER, L.B. doktor tekhnicheskikh nauk (Moscow).

Discussing books on the electric power supply of industrial enterprises. Elektrichestvo no.11:84-87 N '53. (MLRA 6:10)

1. MPU Glavelektromontazh (for Livshits). 2. Novocherkasskiy politekhnicheskiy institut (for Kayalov). (Electric power distribution)

POLYAKOV, B.A., inzhener; ABRAMOVICH, G.P., inzhener; KAYALOV, G.M., dotsent, kandidat tekhnicheskikh nauk.

Remarks on B.A.Teleshev's article "Necessity of rendering the terminology in problems of reactive capacity measurements more precise." Elektrichestvo no.1:79-81 Ja '54. (MLRA 7:2)

1. Kavelektromontazh (for Polyakov). 2. Khar'kovskiy institut inzhenerov zheleznodorozhnogo transporta (for Abramovich). 3. Novocherkasskiy politekhnicheskiy institut (for Kayalov). (Teleshev, V.A.) (Electric engineering--Terminology)

KAYALOV, G.M.

AID P - 708

Subject : USSR/Electricity

Card 1/1 Pub. 29 - 1/26

Author : Kayalov, G. M., Kand. of Tech. Sci.

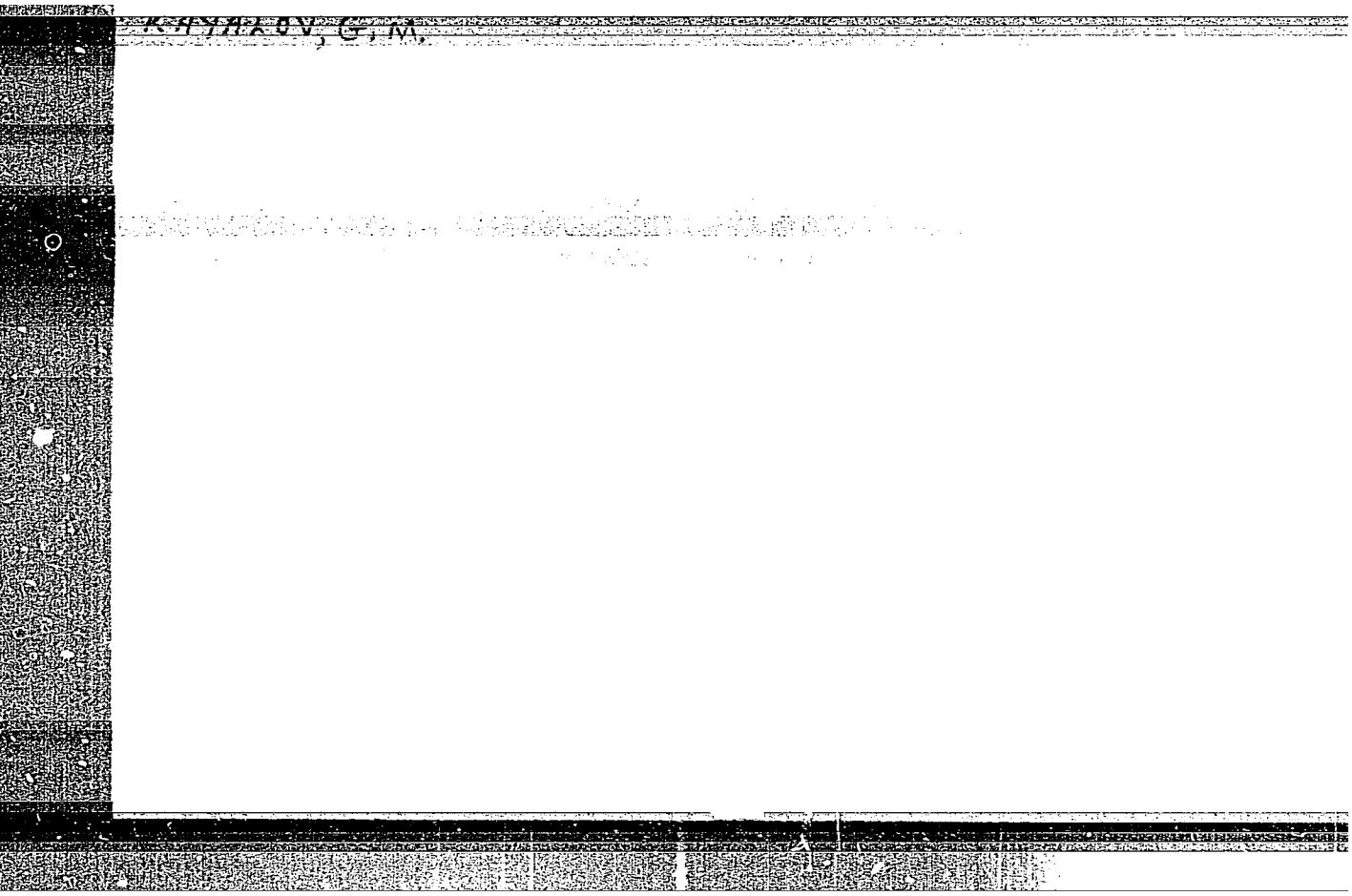
Title : From operational practice of electric power installations

Periodical : Energetik, 9, 1-3, S 1954

Abstract : The author briefly describes three cases in which non-observation of security rules led to accidents. 2 diagrams.

Institution : None

Submitted : No date



KAYALOV, G.M., dotsent, kandidat tekhnicheskikh nauk.

Determining the effective current in asynchronous motors by means of the value of inertia time constant for electric drives. Nauch. trudy NPI 26:311-315 '55. (MLRA 9:12)
(Electric motors, Induction)

KAYALOV, G.M.

112-3-5707

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 3, p. 94 (USSR)

AUTHOR: Kayalov, G. M.

TITLE: Analysis of Loads and Design of Industrial Electrical Networks (Analiz nagruzok i raschet elektricheskikh setey promyshlennykh predpriyatiy)

PERIODICAL: In Sbornik: Tr. nauch.-tekh. soveshchaniya po elektrosnab. promyshlennykh predpriyatiy, Moscow-Leningrad, Gosenergoizdat, 1956, pp. 87-103

ABSTRACT: This article presents a survey of the development of load computation methods during the period 1949-1954 for industrial electrical networks utilizing the principle of modified load curves; the latter is based on two experimentally determined properties of industrial load charts: 1) generalized periodicity, consisting of a constant average load for time intervals equal to one complex technological cycle; 2) rectilinearity of the modified load curve obtained by arranging the ordinates of the load chart in descending order. It is shown that

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a modified load curve of a group of individual electrical receivers enables determination of the upper possible limit of conductor overheating temperature and thermal wear of conductor insulation, i.e., the conductor cross section required can be computed. To determine the modified load curve of a group of independent receivers by means of the theorem of addition of dispersions it is sufficient to know the utilization factor of the receivers and the form factor of the individual load charts. The latter factor is determined mainly by the receiver switching-on factor, since it is demonstrated that the form factor can change only within relatively narrow limits in the time the receiver is switched on. To design a network for carrying capacity, it is sufficient to know, in addition to the connected capacity of the independent receivers, two indices of their operating conditions: the utilization factor and the switching-on factor. It is found that the rated current exceeds the average current by an amount proportional to the difference between the effective and average currents of the total load; the coefficient of proportionality depends upon the type of conductor (cable, insulated wire). A nomogram is presented for determining the thermal wear of the insulation of shop transformers for various characteristics of the modified load curve. G.M.K.

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KAYALOV, G.M.

Economic assessment of methods of power-factor improvement for industrial plants. Energ.biul.no.9:1-4 S '56. (MLRA 9:11)
(Electric power)

KAYALOV, G.M.

Letter to the editor. Energ. biul. no.11:32 N '56. (MLRA 9:12)
(Electric power)

KAYALOV, G.M.

112-3-5719

Translation from: Referativnyy Zhurnal, Elektrotekhnika, 1957, Nr 3, p.96 (USSR)

AUTHOR: Kayalov, G.M.

TITLE: Computation of Limiting Overheating and Thermal Impairing of Insulation of Plant Transformers (K raschetu predel'nogo peregreva i teplovogo iznosa izolyatsii tsekhovykh transformatorov)

PERIODICAL: Tr. Novocherkas. politekhn. in-ta, 1956, Nr 33/47, pp. 26-35

ABSTRACT: A nomogram is given which relates the following performance characteristics of a transformer: z - thermal impairing factor (ratio of the degree of insulation impairing at a given load to the degree of insulation impairing at a

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